

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 2, 3, 4, 7 and 8 in accordance with the following:

1. (currently amended) ~~An information~~ computer-implemented parallel processing method for causing a computing device having a plurality of processors to carry out predetermined information processing, the ~~information processing method~~ comprising:
 - dividing a program to be executed into a plurality of parallel processing blocks;
 - dividing said parallel processing blocks into threads which are basic units to be assigned respectively to said plurality of processors for being processed thereby; and
 - providing a parallel processing control information region indicating a first parallel processing block number;
 - providing, for each of the plurality of threads, a thread information region indicating a second parallel processing block number;
 - providing a parallel processing block control information region containing an executed thread number;
 - causing each processor to increment the second parallel processing block number of the thread information region corresponding thereto when said each processor has finished a current parallel processing block and, when the incremented second parallel processing block number exceeds the first parallel processing block number, causing each processor to update the first parallel processing block number accordingly and creating a new parallel processing block control information region corresponding to the updated first parallel processing block number; and
 - causing each processor to increment the executed thread number in the corresponding parallel processing block control information region when said each processor has finished a current parallel processing block thereof, and causing said each processor to delete the parallel processing block control information region when the incremented executed thread number equals a total number of threads.
 - ~~instructing a predetermined processor to execute a next parallel processing block when said predetermined processor has terminated execution of a respective thread assigned thereto;~~

~~wherein said instructing comprises~~

~~comparing a first parallel block number of a parallel processing control information region corresponding to a parallel processing block executed by a foremost thread and a second parallel block number of a thread information region which corresponds to the respective thread assigned to the predetermined processor, and determining whether a corresponding thread of the predetermined processor should execute said next parallel processing block based upon the comparison results, wherein~~

~~when execution is required, determining said next parallel processing block to be executed by the predetermined processor with reference to said second parallel block number, and generating a parallel processing block control information region corresponding to said next parallel processing block, wherein a number of threads executed in said next parallel processing block are stored, and said corresponding thread of the predetermined processor executing said next parallel processing block, and when execution is not required, determining a parallel processing block to be executed with reference to said second parallel processing block number and executing said parallel processing block.~~

2. (currently amended) ~~An information processing~~The method according to claim 1, wherein when a predetermined instruction is given in said program to be executed, execution of a next parallel processing block is not instructed until processing of all of said threads have been terminated.

3. (currently amended) A computer-readable recording medium which stores a program to cause a computing device having a plurality of processors to carry out predetermined information processing, said program comprising:

parallel processing block-forming means for dividing a program to be executed into a plurality of parallel processing blocks;

thread-forming means for dividing said parallel processing blocks generated by said parallel processing block-forming means, into threads which are basic units to be assigned respectively to said plurality of processors for being processed thereby; and

means for providing a parallel processing control information region indicating a first parallel processing block number;

means for providing, for each of the plurality of threads, a thread information region indicating a second parallel processing block number;

means for providing a parallel processing block control information region containing an executed thread number;

means for causing each processor to increment the second parallel processing block number of the thread information region corresponding thereto when said each processor has finished a current parallel processing block and, when the incremented second parallel processing block number exceeds the first parallel processing block number, causing each processor to update the first parallel processing block number accordingly and creating a new parallel processing block control information region corresponding to the updated first parallel processing block number; and

means for causing each processor to increment the executed thread number in the corresponding parallel processing block control information region when said each processor has finished a current parallel processing block thereof, and causing said each processor to delete the parallel processing block control information region when the incremented executed thread number equals a total number of threads.

~~instructing means for instructing a predetermined processor to execute a next parallel processing block when said predetermined processor has terminated execution of a respective thread assigned thereto, wherein said instructing means comprises~~

~~comparing means for comparing a first parallel block number of a parallel processing control information region corresponding to a parallel processing block executed by a foremost thread and a second parallel block number of a thread information region which corresponds to the respective thread assigned to the predetermined processor, and~~

~~determining means for determining whether a corresponding thread of the predetermined processor should execute said next parallel processing block based upon the comparison results, wherein~~

~~when execution is required, determining said next parallel processing block to be executed by the predetermined processor with reference to said second parallel block number, and generating a parallel processing block control information region corresponding to said next parallel processing block, wherein a number of threads executed in said next parallel processing block are stored, and said corresponding thread of the predetermined processor executing said next parallel processing block, and~~

~~when execution is not required, determining a parallel processing block to be~~

~~executed with reference to said second parallel processing block number and executing said parallel processing block.~~

4. (currently amended) An information processing system including a plurality of processors for carrying out predetermined information processing,

the information processing system comprising:

parallel processing block-forming means for dividing a program to be executed into a plurality of parallel processing blocks;

thread-forming means for dividing said parallel processing blocks generated by said parallel processing block-forming means, into threads which are basic units to be assigned respectively to said plurality of processors for being processed thereby; and

means for providing a parallel processing control information region indicating a first parallel processing block number;

means for providing, for each of the plurality of threads, a thread information region indicating a second parallel processing block number;

means for providing a parallel processing block control information region containing an executed thread number;

means for causing each processor to increment the second parallel processing block number of the thread information region corresponding thereto when said each processor has finished a current parallel processing block and, when the incremented second parallel processing block number exceeds the first parallel processing block number, causing each processor to update the first parallel processing block number accordingly and creating a new parallel processing block control information region corresponding to the updated first parallel processing block number; and

means for causing each processor to increment the executed thread number in the corresponding parallel processing block control information region when said each processor has finished a current parallel processing block thereof, and causing said each processor to delete the parallel processing block control information region when the incremented executed thread number equals a total number of threads.

~~instructing means for instructing a predetermined processor to execute a next parallel processing block when said predetermined processor has terminated execution of a respective thread assigned thereto, wherein said instructing means comprises~~

~~comparing means for comparing a first parallel block number of a parallel processing control information region corresponding to a parallel processing block~~

~~executed by a foremost thread and a second parallel block number of a thread information region which corresponds to the respective thread assigned to the predetermined processor, and~~

~~determining means for determining whether a corresponding thread of the predetermined processor should execute said next parallel processing block based upon the comparison results, wherein~~

~~when execution is required, determining said next parallel processing block to be executed by the predetermined processor with reference to said second parallel block number, and generating a parallel processing block control information region corresponding to said next parallel processing block, wherein a number of threads executed in said next parallel processing block are stored, and said corresponding thread of the predetermined processor executing said next parallel processing block, and~~

~~when execution is not required, determining a parallel processing block to be executed with reference to said second parallel processing block number and executing said parallel processing block.~~

5. (cancelled)

6. (cancelled)

7. (currently amended) A computer implemented method comprising:

dividing a program to be executed into a plurality of parallel processing blocks;

dividing the parallel processing blocks into threads to be respectively assigned to a plurality of processors;

designating a parallel processing block number to each of the assigned threads corresponding to the parallel processing block being executed by the assigned threads at a predetermined time;

comparing the parallel processing block number corresponding to a leading thread of the assigned threads to a parallel block number corresponding to each of the assigned threads; and

determining whether the leading thread should execute a next parallel processing block, wherein when execution is required, determining the next parallel processing block to be executed with reference to the parallel processing block number of the leading thread;

storing the parallel processing block number corresponding to the leading thread in a parallel processing control information region;

providing a parallel processing block control information region comprising an executed thread number;

incrementing the parallel block number corresponding to an assigned thread when the assigned thread has completed a current parallel processing block, and when the incremented parallel block number corresponding to the assigned thread exceeds the stored parallel processing block number, updating the stored parallel processing block number in the parallel processing control information region and creating a new parallel block control information region corresponding to the updated, stored parallel processing block number; and

incrementing the executed thread number in the parallel processing block control information region when each processor has completed a current parallel processing block thereof, and deleting the parallel processing block control information region when the incremented executed thread number equals a total number of threads.

8. (currently amended) An information processing system comprising:

means for dividing a program to be executed into a plurality of parallel processing blocks;

means for dividing the parallel processing blocks into threads to be respectively assigned to a plurality of processors;

means for designating a parallel processing block number to each of the assigned threads corresponding to the parallel processing block being executed by the assigned threads at a predetermined time;

means for comparing the parallel processing block number corresponding to a leading thread of the assigned threads to a parallel block number corresponding to each of the assigned threads; and

means for determining whether the leading thread should execute a next parallel processing block, wherein when execution is required, determining the next parallel processing block to be executed with reference to the parallel processing block number of the leading thread;

means for storing the parallel processing block number corresponding to the leading thread in a parallel processing control information region;

means for providing a parallel processing block control information region comprising an executed thread number;

means for incrementing the parallel block number corresponding to an assigned thread when the assigned thread has completed a current parallel processing block, and when the incremented parallel block number corresponding to the assigned thread exceeds the stored

parallel processing block number, updating the stored parallel processing block number in the parallel processing control information region and creating a new parallel block control information region corresponding to the updated, stored parallel processing block number; and means for incrementing the executed thread number in the parallel processing block control information region when each processor has completed a current parallel processing block thereof, and deleting the parallel processing block control information region when the incremented executed thread number equals a total number of threads.